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Bertrand Gruau

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1727 KING STREET  
SUITE 105  
ALEXANDRIA, VA 22314

EXAMINER

ROYSTON, ELIZABETH

ART UNIT

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1791

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PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

<b>Office Action Summary</b>	<b>Application No.</b> 10/501,929	<b>Applicant(s)</b> GRUAU ET AL.	
	<b>Examiner</b> Elizabeth Royston	<b>Art Unit</b> 1791	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 9/10/2009.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 14-26 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 14-26 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |   |   |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)         | 4) <input type="checkbox"/> Interview Summary (PTO-413)           |
| 2) <input type="checkbox"/> Notice of Draftperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____                                      |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)         | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____   | 6) <input type="checkbox"/> Other: _____                          |

**DETAILED ACTION**

1. The new claims 14-26 as received 9/10/2009 are accepted.
2. The restriction on claims 4-7 and 12 of the claims 1-13 as filed 7/28/2004 is rescinded, and claims 14-16, 21-24 and claims 17-20, 25 have been rejoined.
3. Claims 14-26 are examined in the instant Official action.

***Terminal Disclaimer***

4. The terminal disclaimer filed on 9/10/2009 disclaiming the terminal portion of any patent granted on this application which would extend beyond the expiration date of US PN 7037456 has been reviewed and is accepted. The terminal disclaimer has been recorded.

***Specification***

5. The abstract of the disclosure is objected to because the length exceeds 150 words. Correction is required. See MPEP § 608.01(b).

***Claim Rejections - 35 USC § 112***

1. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

6. Claim 15 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. Specifically, in the limitation "the breakoff zone breaks during cooling after molding" can be interpreted as "the breakoff zone breaks due to the cooling", "the breakoff zone breaks under an applied force during cooling", or "the breakoff zone breaks for some undefined reason during cooling".

In light of the specification on page 12, lines 5-29, specifically lines 11-13, "it [the notch] cools more quickly than other parts of the neck, so that forces causing breakage can be applied", lines 15-20, and lines 25-28, "the breakoff zone should be broken as soon as the temperature of the plastic material becomes close to its vitreous transition temperature in the said breakoff zone", the claim is interpreted as "the breakoff zone breaks under an applied force during cooling".

***Claim Rejections - 35 USC § 103***

7. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

8. The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

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1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

9. Claims 14 and 16-21 are rejected under 35 U.S.C. 103(a) as being unpatentable over Schneider (US PN 6382438 B1) in view of Magerle (US PN 3313875).

With regard to claim 14, Schneider teaches a method of compression molding plastic parts (col. 2, line 45-47) having a neck provided with an orifice (figure 2 and 8), comprising the steps of constructing the plastic part with a molded neck having a top wall (figure 4, lower portion of item 220; figure 5, lower portion of item 21) that comprises a thinned zone having a contour that delimits the shape of the orifice (col. 4, line 50-52; figure 4, item 210), the plastic part being constructed such that the thinned zone is bounded by a notch (figure 4, the notch below the area of item 210) having a section in a diametric plane passing through the axis of the neck which is oriented along a direction parallel to the axis of the neck, and such that the top wall also comprises a breakoff zone in which a mechanical force can be applied to the top wall with sufficient intensity to break the top wall at the notch (col. 6, line 10-12), the application zone (figure 4, item 220) being distinct from the thinned zone (figure 4, item 210), the plastic part further being constructed such that the top wall also includes two zones that can resist the mechanical force (col. 4, line 52-54), one of the zones being designed to transmit the mechanical force (figure 4, item 221) and the other of the zones acting as a support (figure 4, item 206), and applying the mechanical force to the application zone

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sufficient to cause a break to occur at the notch and detach at least part of the top wall (col. 5, line 20-28; col. 6, line 10-12), thereby opening up the orifice (col. 5, line 29-32).

Although Schneider does not explicitly detail the construction of the compression tool, since Schneider teaches compression molds as imposing the forms described (col. 2, line 47; col. 5, line 43-45), the compression tool in the teaching of Schneider would intrinsically have been designed to produce the molded product in the teaching of Schneider.

Although Schneider does not explicitly disclose that the mold is opened prior to the application of the mechanical force, since the invention in the teaching of Schneider includes a tube with a removable top (col. 2, line 30-36), then in order to function as the invention in the teaching of Schneider, the part must have been removed from the mold prior to the application of the mechanical force and would intrinsically require the opening of the mold prior to the application of the mechanical force.

Schneider does not explicitly disclose the details of compression molding method or the opening the molding tool by the relative displacement of the moving parts.

Magerle teaches a method of compression molding plastic parts having a neck provided with an orifice (col. 2, line 60-64) comprising the steps of bringing the blank to an appropriate temperature (col. 1, line 26-28), and then placing the blank in an air gap between at least two moving parts of a compression molding tool (col. 1, line 28-30; col. 4, line 18-22; figure 3, item 78) and bringing the at least two moving parts towards each other to compress the blank (col. 4, line 27-30), the plastic material of the blank being caused thereby the flow so as to fill the cavities in the moving parts until the moving

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parts stop moving relative to each other (the transition between figures 3, 6, and 7), the cavities once brought towards each other defining a volume of the part with a neck (figure 7, item 102), and opening the molding tool by the relative displacement of the moving parts (col. 6, line 61-62).

It would have been obvious to one of ordinary skill in the art at the time of the invention to use the method in the teaching of Magerle as the method of compression molding in the teaching of Schneider. The rationale to do so would have been the motivation provided by the teaching of Magerle, that to use such a method predictably results in the formation of plastic parts having a neck (col. 2, line 62-64) provided with an orifice such as tubes and caps (col. 1, line 15-21).

With regard to claim 16, Schneider is silent as to the angle of the V or the angle of the bisecting line. However, it would have been obvious to one of ordinary skill in the art at the time of the invention to optimize the angle of the V and the bisecting angle for the ease of tearing in the breakoff zone.

With regard to claim 17, Schneider teaches a top wall (figure 4, lower portion of item 220) comprising a transverse wall (figure 4, bottom surface of item 220) and a stick having an end at which a force can be applied laterally to cause breakage of the breakoff zone (figure 4, area of item 230 and upper portion of item 220).

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With regard to claims 18, Schneider teaches the top wall comprises a wall which after molding is torn off and then removed (col. 6, line 10-12).

Although Schneider does not explicitly disclose removal by applying an axial thrust, since the top wall is removed by hand after twisting, an axial thrust is reasonably expected as an intrinsic part of the removal process in the teaching of Schneider.

With regard to claim 19, Schneider teaches a top wall comprising a transverse wall (figure 4, bottom surface of item 220) acting as a shutter and a protuberance with a T-shaped profile (figure 4, item 230 demonstrates the "arms" and item 220 demonstrates the "stem" of the T-shape), forming a ring groove on an outer surface thereof (figure 4, grooves around item 210), with relative displacement causing tearing off and then removal of the shutter (col. 6, line 10-12).

Although Schneider does not explicitly disclose prongs of a fork or rail may be engaged, the structure of top wall in the teaching of Schneider is intrinsically capable of being engaged with the prongs of a fork or a rail.

With regard to claim 20, Schneider teaches the top wall as a protuberance with a non-convex polygonal section (figure 4, item 220, 230, and the top "non-convex" portions on top of item 230), which is torn off and then removed by a rotation of unscrewing movement (col. 6, line 10-12).



With regard to claim 21, Schneider does not explicitly disclose the details of the compression molding tool.

Magerle teaches the parts of the compression molding tool are also moved by a continuous movement orthogonal to the direction along which the parts move toward each other (col. 4, line 27-30; figure 7, item 66, 68).

It would have been obvious to one of ordinary skill in the art at the time of the invention to use the method in the teaching of Magerle as the method of compression molding in the teaching of Schneider. The rationale to do so would have been the motivation provided by the teaching of Magerle, that to use such a method predictably results in the formation of plastic parts having a neck (col. 2, line 62-64) provided with an orifice such as tubes and caps (col. 1, line 15-21).

10. Claim 15 is rejected under 35 U.S.C. 103(a) as being unpatentable over Schneider (US PN 6382438 B1) in view of Magerle (US PN 3313875), as applied for claims 14 and 16-21 above, and in further view of Hwang (US PGPub 2003/0039717 A1).

With regard to claim 15, although Schneider does not explicitly disclose breaking of breakoff zone during cooling, Schneider does teach breaking of the breakoff zone once cooled. It would have been obvious to one of ordinary skill in the art at the time of the invention to modify the teaching of Schneider such that the breakoff zone was broken during cooling if the desired product was only a neck with an opening, which is well known in the art, as is described in the teaching of Magerle. Furthermore, It would

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have been obvious to one of ordinary skill in the art at the time of the invention that if it was desired to break the breakoff zone during cooling in the teaching of Schneider, to break the plastic part as soon as the temperature of the plastic material becomes close to a vitreous transition temperature at the breakoff zone. The rationale to do so would have been the motivation provided by the teaching of Hwang that to break a plastic at a temperature at the transition between the solid and the molten materials predictably results in the formation of a clean break at the interface (paragraph 37, line 21-26).

11. Claims 22-26 are rejected under 35 U.S.C. 103(a) as being unpatentable over Schneider (US PN 6382438 B1) in view of Magerle (US PN 3313875), as applied for claims 14 and 16-21 above, and in further view of Axelrad (US PN 2714226) and Toulmin (US PN 2994297).

With regard to claims 22 and 23, Axelrad teaches that it was known in the art at the time of the invention to use elastomeric dies in molding processes (col. 1, line 39-41) to create shapes in plastic materials. Axelrad further teaches an apparatus where the mold on one side is an elastomer (col. 2, line 13-18; figure 1, item 16), and the corresponding face is of a material of suitable construction for heating plastic material as is "well known" col. 2, line 31-34). Although Axelrad does not explicitly disclose that "well known" materials are metallic, since Axelrad teaches the concept of metal platens (col. 1, line 43; col. 1, line 67-69) and since the material of the corresponding face would be required to withstand the high temperatures and pressures of injecting melted

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plastics, it would have been obvious to one of ordinary skill in the art at the time of the invention to make the corresponding face (platen) of a metallic component.

Axelrad further teaches that the elastomeric molds are specifically designed (col. 1, line 34-37; 46-49) for manufacturing components with shapes (figure 1, item 18). It would have been obvious to one of ordinary skill in the art at the time of the invention to use an elastomeric mold as in the teaching of Axelrad to mold the toroidal groove in the teaching of Schneider in view of Magerle. The rationale to do so would have been the motivation provided by the teaching of Axelrad, that to use an elastomeric mold predictably results in the formation of molded good quality complex shapes (col. 3, line 63-68) at lower costs than with a metal die (col. 1, line 22-28).

Axelrad does not explicitly disclose plastic dies.

Toulmin teaches that it was known in the art at the time of the invention to use plastic dies (col. 1, line 17-18).

It would have been obvious to one of ordinary skill in the art at the time of the invention to use a plastic die as the die in the teaching of Schneider in view of Magerle and Axelrad. The rationale to do so would have been the motivation provided by the teaching of Toulmin, that plastic dies are predictably low cost dies as compared to metal dies (col. 1, line 14-16).

With regard to claim 24, Schneider does not explicitly disclose the details of the compression molding tool.

Magerle teaches a first moving part comprising a cavity produced with a stopper to close off the orifice (figure 6, item 70, 72), the stopper being positioned such that an inner surface thereof acts partially as a molding cavity for shaping the neck (col. 6, line 38-40; figure 7, item 70, 72), at least in the breakoff zone as would be the case in the teaching of Schneider in view of Magerle.

It would have been obvious to one of ordinary skill in the art at the time of the invention to use the method in the teaching of Magerle as the method of compression molding in the teaching of Schneider. The rationale to do so would have been the motivation provided by the teaching of Magerle, that to use such a method predictably results in the formation of plastic parts having a neck (col. 2, line 62-64) provided with an orifice such as tubes and caps (col. 1, line 15-21).

With regard to claims 25 and 26, Schneider in view of Magerle does not explicitly disclose the breakoff zone is shaped using a part of the moving stopper which forms a toroidal edge; however, it would have been obvious to one of ordinary skill in the art at the time of the invention that if a groove was desired on the top of the neck, to use a mold with the inverse shape of the desired groove.

### ***Conclusion***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Elizabeth Royston whose telephone number is 571-270-7654. The examiner can normally be reached on M-Th 8:00am - 5:00pm.

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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Christina Johnson can be reached on (571) 272-1176. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/ER/

Patent Examiner, GAU 1791

| /Christina Johnson/  
Supervisory Patent Examiner, Art Unit 1791

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